

Effervescent Fine Water Mist Fire Extinguisher for Microgravity Environments, Phase I

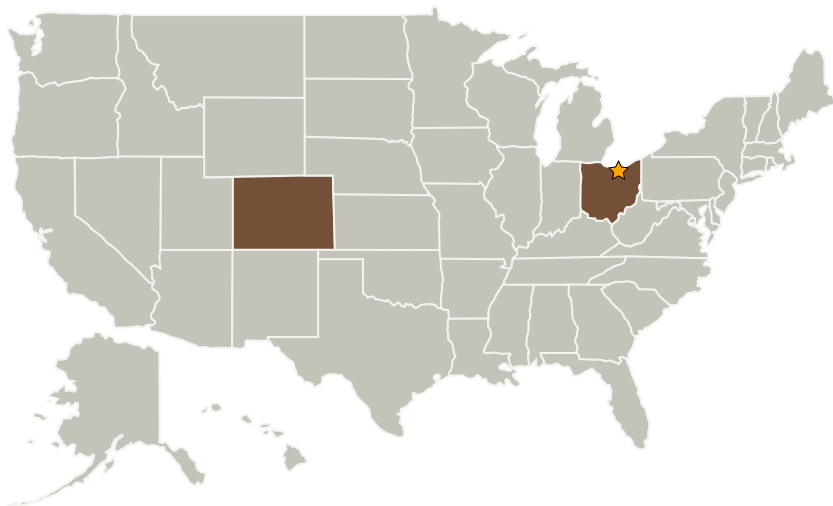
Completed Technology Project (2006 - 2006)



Project Introduction

Fire suppression systems provide an essential safety function onboard spacecraft. The transition away from halon-based systems has presented an opportunity for efficient and cost-effective alternative approaches. ADA Technologies proposes to develop a fine-water-mist fire suppression system suitable for use in microgravity. The ADA design features a single pressure tank with a patented effervescent-gas spray nozzle to generate droplets of a size that is optimum for fire suppression. The proposed work will modify ADA's current fine-water-mist device to allow for operation in reduced and micro-gravity environments. Design modifications will focus on providing a uniform mixture of water and atomization gas to the effervescent nozzle. The resulting extinguisher will be compact, simple, and rugged, with pound-per-pound better suppression capability than carbon dioxide fire extinguishers. ADA is teaming with the Colorado School of Mines to employ their expertise in micro-gravity combustion and related fire suppression test facilities. In Phase II, the designs will be refined and upgraded to improve their manufacturability, reduce weight and volume, and lower unit costs. The project team is collaborating with an aviation safety hardware supplier to market the systems to the commercial aircraft industry and is exploring industrial applications.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

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Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
ADA Technologies, Inc.	Supporting Organization	Industry	Littleton, Colorado

Primary U.S. Work Locations	
Colorado	Ohio

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.4 Environmental Monitoring, Safety, and Emergency Response
 - └ TX06.4.2 Fire: Detection, Suppression, and Recovery